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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,594	08/05/2003	Yoshiki Fujii	044499-0172	4806

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EXAMINER

LE, BRIAN Q

ART UNIT PAPER NUMBER

2624

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,594

Applicant(s)

FUJII ET AL.

Examiner

Brian Q. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/05/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/20/04; 9/07/06</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagasaki et al.
U.S. Patent No. 6,278,797.

Regarding claim 1, Nagasaki teaches a method of producing inspection data (method produces inspection information) (column 5, lines 10-13) for inspecting (column 1, lines 7-10) a parts-mounted board (land-attached circuit board) (column 15, line 17 and FIG. 1A) by image processing (column 23, lines 43-50), characterized in that an inspection data corresponding to each part (prepare inspection data for each land for comparison) (column 3, line 55 to column 4, line 3) on a board (FIG. 1A) constituting an object of inspection is read from a part library produced in advance (image of a land can be prepared in advance) (column 23, lines 49-51), and the process for setting the inspection data at the mounting position of said part is executed (land region fixing means to set/prepare mounting position data such as height of the lands for inspection) (column 5, lines 4-16 and column 23, lines 53-55), after which an image area corresponding to each land is detected on an image picked up from a model of the board constituting said object of inspection (input images of the land object to compare with master image for inspection) (column 23, lines 43-65), and based on this inspection result (result to define whether the inspection if good or defective by a defined tolerance) (column 24, lines 20-

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53), the set data (inspection information of the window of the land) (column 7, lines 10-12 and FIG. 12A-FIG. 12B) of the inspection window (column 6, lines 50-57) included in said inspection data is corrected (column 21, lines 4-25).

Regarding claim 2, Nagasaki also teaches an inspection data producing method (as discussed in claim 1) characterized in that in the process of detecting the image area corresponding to said land (column 23, lines 45-50), the process is executed for retrieving the position of the land edges with reference (position data X_{ABS} , Y_{INC} obtained for each scanning point of the surface of land would include the position of the land edges since the laser beam scans the entire surface of land) (column 4, lines 35-38; column 18, lines 46-49; column 19, lines 42-45 and FIG. 12B) to a solder (column 14, lines 33-40) inspection window (FIG. 12B) based on the set data before correction on the image of said model (base on inspection information before inspection and thus correction of image) (FIG. 25, S201).

Referring to claim 3, Nagasaki further teaches an inspection data producing method (as discussed in claim 1), characterized in that in accordance with the correction of the set data (FIG. 5, element 94b and 94c and FIG. 25, S202, S203, S204) of said inspection window (FIG. 43, P10), an inspection reference data corresponding to the corrected inspection window is corrected (FIG. 10 and column 21, lines 4-25).

Regarding claim 4, Nagasaki discloses an inspection data producing method (as disclosed in claim 1), characterized in that using the corrected inspection data for a predetermined part (predetermined value/predetermined condition of part of each land for inspection purpose) (column 5, lines 7-8 and column 8, line 35) on said board (standard data as predetermined part on a land/board) (FIG. 9), the inspection data for the parts of the same type as said part is

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corrected (corrected/calculated the predetermined part/standard data/properties of land part) (FIG. 9; FIG. 19; column 24, lines 50-59 and column 26, lines 1-14).

For claim 5, Nagasaki also discloses an inspection data producing method (as discussed in claim 1), characterized in that the inspection data shared by the parts (standard data which are use for common inspection purpose of land such as land area, land diameter ...etc) (FIG. 9) is produced using the inspection data corrected for the same type of parts (corrected/calculated the standard/predetermined part/standard data/properties which are the same type of parts in inspecting land) (FIG. 9; FIG. 19; column 24, lines 50-59 and column 26, lines 1-14) on said board, and the inspection data for each part is rewritten (storing is writing in a memory, therefore for every time that storing is done after judgement, it is rewriting the data to the memory) into said common inspection data (storing standard inspecting data/same type of parts of land) (column 27, line 60 to column 28, line 8).

Referring to claim 6, Nagasaki further discloses an inspection data producing method (as discussed in claim 1), characterized in that the process for rewriting said parts library or the process for producing a new parts library (corrected data wherein producing new parameters for inspection if the standard inspection is not adequate for inspect processing) (FIG. 10; FIG. 25, S202, S203, S204) is executed for a predetermined part using the corrected inspection data (column 21, lines 4-25 and column 31, lines 52-54).

Regarding claim 7, Nagasaki teaches a board inspection apparatus (column 1, lines 7-12) comprising:

image input means (CCD camera) (column 34, line 17) for inputting an image picked up of a board (column 23, lines 43-47); data file producing means (FIG. 19) for producing an

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inspection data file required for inspection of a board to be inspected (table of inspection data which is required for board/land inspection) (column 28, lines 10-15), by executing the process for reading the inspection data corresponding to each part from a parts library (memory that stores inspection data commonly such as master image)(column 31, lines 48-52) produced in advance (process of generating inspection data of master image in advance) (column 23, lines 48-51) and setting said inspection data on the mounting position of said part (land region fixing means to set/prepare mounting position data such as height of the lands for inspection) (column 5, lines 4-16 and column 23, lines 53-55); land inspection means for receiving an input model image of a corresponding board (the process of retrieving master image) (column 23, lines 50-65) after complete production of said inspection data file and detecting an image area corresponding to the land on said image (after the generation of standard data of master image of each corresponding land) (column 3, lines 55 to column 4, line 3; column 4, lines 23-37; and column 23, lines 43-50); correcting means for correcting the set data (FIG. 5, element 94b and 94c; FIG. 25, S202, S203, S204; and FIG. 10) of an inspection window in accordance with said detected image area (column 6, lines 50-57); and registration means for registering in a memory (storing data to a memory) (column 19, lines 24-30) the inspection data file including the set data after correction (store corrected data) (column 19, lines 24-26).

CONCLUSION

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to producing/generating inspecting data for land/circuit board inspection:

U.S. Pat. No. 6,167,149 to Tsujikawa et al., teaches inspecting apparatus of mounting state of component.

U.S. Pat. No. 5,991,435 to Tsujikawa et al., teaches inspecting apparatus of mounting state of component.

U.S. Pat. No. 5,822,449 to Kobayashi et al., teaches method for mounted component inspection.

U.S. Pat. No. 5,724,439 to Mizuoka et al., teaches inspecting apparatus of mounted component.

U.S. Pat. No. 5,555,316 to Tsujikawa et al., teaches inspecting apparatus of amounting state of component.

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q. Le whose telephone number is 571-272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Brian Le', with a stylized flourish at the end.

Brian Le
October 15, 2006